OUR BOOK SHELF.

Grundriss der Psychologie. By Wilhelm Wundt. Pp. xvi + 392. (Leipzig: Wm. Engelmann, 1896.)

THIS is the third book on psychology which Prof. Wundt has written, and its special aim is to give an account of the general principles of the science apart from physiological considerations on the one hand, and philosophical on the other. Technical details are to a large extent omitted, the reader being referred for them to the "Grundzüge der physiologischen Psychologie." The book resembles in many respects Külpe's "Outlines," and it seems as if the author intended it to correct the departures from the Wundtian standpoint which are to be found in the latter. A novel feature of the book is the description of ideas, emotions and volitions as psychical structures ("Gebilde"), with the reservation, however, that both the structure and the elements of which they are composed are to be regarded as processes and not as objects. After considering psychical elements and "Gebilde," the subjects of consciousness and attention, association and apperception take up a third section; the fourth section treats of mental development in the animal and the child, and the book concludes with the formulation of certain laws of psychical causality.

Cours de Physique de l'École Polytechnique. By M. J. Jamin. *Premier Supplément.* By M. Bouty. Pp. 182. (Paris: Gauthier-Villars et Fils, 1896.)

THIS supplement to the latest edition of the "Cours de Physique" of Jamin and Bouty, deals with progress in heat, acoustics, and optics. It is not intended to be a complete account of work done in these three sections of physical science, but a description of investigations which have led to definite results likely to survive for some years. In the section on heat, the work described is concerned with the measurement of temperature, principles of thermodynamics, changes of state, dissociation, osmotic pressure, critical points, and capillary phenomena. In the section on acoustics and optics, the subjects of the chapters are: propagation of vibratory movements, propagation of sound, study of vibrations, propagation of light, and diffraction, interference phenomena and their applications. Students of physics will find the volume useful for consultation, especially as references are always given to the papers abstracted.

Les Rayons X, et la Photographie a travers les Corps Opaques. By Dr. C. E. Guillaume. Pp. viii + 127. (Paris: Gauthier-Villars et Fils, 1896.)

THIS is the fullest and most scientific account we have seen of work with X-rays, and the investigations which led up to Röntgen's discovery. The first part of the book contains a general account of the kinetic theory of gases and the nature of light, together with a few particulars with reference to electric discharges in gases. These facts, and the statement of the theories upon which they depend, prepare the way for a concise description of researches on the luminous phenomena exhibited by electric discharges in rarefied gases, from the times of Faraday and Hittorf until now, especial attention being given to the bearings of these investigations upon the nature of kathode rays. Röntgen's discovery, and many of the researches to which it has given rise, together with an account of its applications, make up the remainder of the volume. Most of the results described have appeared in the *Comptes rendus* of the Paris Academy of Science, or in NATURE, and Dr. Guillaume has now brought them together in a handy form. Having regard to the large amount of work still in progress, the volume can hardly be considered as permanent in its present shape; but when the proper time arrives, it may be expanded, and will then make a handbook well worth a place in scientific libraries.

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

Blood-Brotherhood.

THIS very ancient custom, performed in so many ways, and still practised by all barbarous and semi-barbarous peoples, might, by the help of modern science, be turned to useful and beneficent ends. For some time I have thought, and the conviction grows on me, that residents and travellers in tropical parts of the world might the better withstand the climate, malaria and fevers to which they often succumb, by entering into blood-brotherhood with a healthy native.

The classical researches of Pasteur and his disciples have shown how various diseases may be controlled, and immunity secured to man and the lower animals, by the proper use of antitoxins, and by diluted subcutaneous injections of virus in certain cases of blood-poisoning. Although not parallel in specific aim, blood-brotherhood may be found to possess similar prophylactic properties. Is it not probable that a European inoculated with the blood or serum of a native, would be better able to resist the climatic changes to which he is subjected in tropical countries? In other words, would blood-inoculation not set up in his system those changes necessary to adapt him to the climate, and render him immune to the diseases which are the result of climate? The suggestion is based on the assumption that the native is more healthy in his own climate than any foreigner can be, and that blood-inoculation would acclimatise the latter at once.

The advantages to be derived from such a system are obvious. Only strong, healthy persons can long withstand the climate of Central Africa. Many missionaries and pioneers are annually sacrificed to it. Men certified by medical practitioners as sound in lung and limb at home, are weakened and prostrated there. A recent example of great loss of life due to climate was that of the French expedition to Madagascar, where the army was decimated from this cause. And another noted example is that of the late lamented Prince Henry of Battenberg, who died on his way to Ashantee of a disease brought on by climatic change.

I have referred to the writings of African travellers for information on the effect on the system of blood-brotherhood, without positive result. No one seems to have suffered by it. Livingstone, Grant and Cameron mention the custom, and all of them entered into it in the person of one of their attendants. Perhaps they feared the consequences on themselves, but no explanation is given. Stanley is the only traveller whom I have been able to find entered into blood-brotherhood in person. At first he, too, seems to have done so by proxy, but afterwards he took part in it fearlessly, and underwent the operation fifty times! So that Trumbull ("The Blood Covenant," p. 38) is justified in saying that "the blood of a fair proportion of all the first families of Equatorial Africa now courses in Stanley's veins." We have not been told that Stanley suffered in any way from these inoculations. We may therefore conclude with a fair degree of reason that his healthiness (on the whole), endurance and success, was attributable in some measure to the exchange of blood with the natives he met.

Blood-brotherhood as practised in Central Africa varies in detail, and is accompanied by many formalities; but the essential part of the process, as described by Cameron ("Across Africa," p. 333) consists in "making an incision on each of the right wrists, just sufficient to draw blood, a little of which is scraped off and smeared on the others cut." In many cases the blood wasted is considerable, but the science of to-day does not demand this. It would only be necessary to use a small quantity, perhaps not more than the quantity of lymph required in small-pox inoculation. And it would be easy to get healthy natives at the port of debarkation, willing, for a small remuneration, to supply the necessary blood or serum. The operation might prove invaluable to persons joining the Civil or other Service in India or the colonies, to missionaries appointed to tropical countries—and, in fact, to all persons requiring to travel or reside in hot or unhealthy climates. It might also be found of value were the circumstances reversed—that is to say, with the natives of hot climates coming to reside in this country, or with persons electing to reside at home after long residence abroad.

Experiments conducted in the direction I have indicated, would, I believe, result in the acquisition of much useful and

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valuable information. And my object in addressing you now is to invite discussion on the suggestion, in the hope that it may be taken up by scientific men in a position to prosecute the inquiry. I hope too, some of the readers of NATURE, engaged in kindred studies, will give us the benefit of their experience and the results of any observations calculated to throw light upon it.

T. L. PATTERSON.

Greenock, April 17.

Megalithic Folk-lore.

As I understand that many investigators have come to the conclusion that there are no traces of Dravido-Tibetan races to be found west of Persia, permit me to point out a fact which may not have been brought to their attention.

I have been in Asam now thirty-two years, and during that time the province, and part of Bengal, has been swept (suddenly) from end to end, by a severe scare, which folk at home would find it difficult to understand. It was similar in each case, and to the effect that the Queen wanted five children's heads from each village.

Our Bengali coolies nearly went frantic, in many factories demanding axes and daus (knives) to defend their families. In my own case they implored me to let them put their wives and children on the tea-leaf lofts, while they would guard them at night. In another factory all the doors in the lines were barricaded ; or at still another, all were kept wide open so that at the first scream at night all could at once rush out and hide n the jungle.

The state of tension for a week was awful, and of course the ludicrous now and then came in. Two of my near neighbours, freshly out and bent on snipe, happened one morning to emerge from the jungle, muddy and with guns, among the women-folk at work, who all had their children with them for safety.

For the instant they were taken for the child-stealers, and the stampede and shrieks were something awful.

At one place I found an Asamese village deserted, not a soul left—all in hiding, no doubt.

It was quite useless to argue with the common folk, and my educated Babu even half believed it, for on my explaining the absurdity of it all, he simply answered, "Perhaps, sir, it is too foolish."

After a lot of trouble and correspondence, it turned out that the rumour (believed by all) was that the heads were wanted to put under the foundation of the piers for the Gorai bridge. There must be hundreds of Europeans now at home who can corroborate this.

And now to the point. It was a custom among the Kasias, I am told, to sacrifice a victim by putting him in the hole if great difficulty was experienced in raising any of the huge monoliths, and the same custom existed in Polynesia when raising the great posts of Maræ, or large communal houses.

But all over Chota Nagpur, Megalithic remains are common, and our coolies are mostly from thence.

Here then, I take it, we have fairly good evidence that one at least of the "Megalithic" races preserve vividly the folk-lore of past ages. Have we anything like this in European races *in re* these remains of prehistoric times?

That the building of houses on piles is essentially an Asiatic race custom, I need hardly point out, and that the villages in the Swiss lakes are on the same pattern anthropologists will allow.

It may not be so well known that the long communal houses still seen (as a survival) in Italy (Campagna) are on *precisely* the same pattern as those among most of our Naga, and among Dyaks

Add to this, that the prehistoric remains of North Europe are like the present Lapps in character, and it seems not impossible or even unlikely that the races who erected the Megalithic remains in Europe and North Africa, may be allied to those among whom the traditions are yet so vividly remembered.

S. E. PEAL.

Sibsagar, Asam, March 27.

The Glacial Drift in Ireland.

SINCE the publication of Prof. G. A. J. Cole's letter in NATURE (vol. xlvii. p. 464), in which he records the discovery of pebbles of the Ailsa Craig Riebeckite-eurite from the drift gravels on Killiney strand, numerous observers have noted its occurrence in several places along the east coast of Ireland, but hitherto, I believe, not further south than Greystones, Co. Wicklow. Owing to the special interest of this rock, both to glacial observers and petrographers, it may be worth mentioning that two weeks ago I found one small pebble (about 3 c.m. square) of the rock on the shore of Tramore Bay, Co. Waterford, nearly 80 miles further south than the previously mentioned locality, and 230 miles from Ailsa Craig.

HENRY J. SEYMOUR.

Royal College of Science, Dublin, April 20.

The Bright Meteor of April 12.

THIS meteor was visible overhead at Dunstable, Beds., precisely at the time mentioned by A. G. Tansley (p. 581). I had just started one of my sons to London by the 8.5 p.m. train, and I saw the meteor sail slowly across the sky from north-west to south-east, directly the train had started. The nucleus as seen here was brilliant white and yellow-white with a bright yellow-white train. The train formed an equilateral triangle, the nucleus being in one angle in front. I did not see the train in the form of sparks, but as light. Before it died away, both nucleus and train became bright crimson and an equally brilliant blue. There was no explosion heard by me.

Dunstable. WORTHINGTON G. SMITH.

Remarkable Sounds.

THE following passage in a Chinese itinerary of Central Asia —Chun Yuen's "Si-yih-kien-wan-luh," 1777 (British Museum, No. 15271, b. 14), tom. vii. fol. 13, b.—appears to describe the icy sounds similar to what Major Head observed in North America (see p. 78, *ante*):—

"Muh-süh-urh-tah-fan (= Muzart), that is Ice Mountain[1], is situated between Ili and Ushi. . . . In case that one happens to be travelling there close to sunset, he should choose a rock of moderate thickness and lay down on it.[2] In solitary night then, he would hear the sounds, now like those of gongs and bells, and now like those of strings and pipes, which disturb ears through the night: these are produced by multifarious noises coming from the cracking ice."

KUMAGUSU MINAKATA.

April 9.

THE ROYAL OBSERVATORY, EDINBURGH.

THE new Edinburgh Royal Observatory, which was formally opened by the Secretary for Scotland on the 7th inst., is situated on Blackford Hill, some two and a half miles due south of the centre of the city, in a public park, of which about three acres have been transferred to the Crown by the Edinburgh Town Council. The centre of the observatory is about 440 feet above the level of the sea. The name of Blackford Hill will suggest to many readers the lines from "Marmion":

Blackford! on whose uncultured breast
  Among the broom, and thorn, and whin,
A truant-boy, I sought the nest,
Or listed, as I lay at rest,
  While rose, on breezes thin,
The murmur of the city crowd,
And, from his steeple jangling loud,
  Saint Giles's mingling din.

The main building is T-shaped, with a tower for the 24-inch reflector, removed from Calton Hill, at the west end, and a somewhat larger tower for the 15-inch Dunecht refractor at the east end. The clear length of the platform above the rooms connecting these towers is 110 feet. The stem of the T is built in three stories. In the basement are the gas engine and dynamo, storage cells and primary batteries, the heating apparatus and a bookstore; while above the library and adjoining rooms is a room 66 feet by 23 feet, with its floor on a level with the platform already mentioned.

This room, which ranges exactly north and south, is intended for optical experiments and spectroscopic

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[1] In Prejevalsky's "From Kulja, across the Tian-shan to Lob-nor," London, 1879. foot-note, p. 177, the word Muzart, or Mussart, is stated to mean "Snowy."

[2] The old Chinese pilgrim, Hwen-tsang, who followed this same route, observed that the travellers passing thereby must sleep on the ice (Schuyler "Turkestan," London, 1876, vol. i. p. 391).

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